News Release

83-53

Contact: Bob Jacobson
(206) 442-1203

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FOR IMMEDIATE RELEASE

Three public workshops will be held next month by the U.S. Environmental Protection Agency to explain EPA's proposal to curtail emissions of airborne arsenic from the ASARCO smelter in Tacoma.

The workshop schedule:

	Wednesday August 10	Tuesday August 16	Thursday August 18
Time:	7 - 10 p.m.	7 - 10 p.m.	7 - 10 p.m.
Place:	McMurray Middle School (Intermediate) S.W. 196th Street Vashon	Wilson High School 1202 N. Orchard Tacoma	Wilson High School 1202 N. Orchard Tacoma

Moderator at each of the workshops will be Ernesta B. Barnes, EPA's Northwest regional administrator.

"At the workshops, EPA will describe the proposal and the information upon which it was based," Barnes said. "We hope to give people a clear idea how the agency will make a final decision on what new controls should be placed on arsenic emissions at ASARCO.

(more)

"The workshops will be structured to allow plenty of time for questions. We'll be answering those questions, and we will be forthright in giving information to people who want to participate in EPA's final decision, either by testifying at the August 30 public hearing or by sending EPA their written comments."

A principal issue Barnes expects to be discussed at the hearing is whether the arsenic controls proposed by EPA will provide the legally-required "ample margin of safety to protect public health." EPA has acknowledged that its proposed controls will not eliminate risks to public health, but will only reduce them.

Barnes explained that the inorganic arsenic released by ASARCO is a probable carcinogen.

"It is assumed by EPA that any exposure to inorganic arsenic by inhalation -- regardless of the amount of the exposure -- would result in a risk of lung cancer," Barnes said. "Even with the controls EPA has proposed, it is estimated that ASARCO will continue to release 189 tons of arsenic a year to the atmosphere, with the result that there would be one additional lung cancer death a year within a 12.4-mile radius of the smelter."

The public hearing on EPA's proposed controls will be held from noon to 10 p.m. on Tuesday, August 30, in the Rotunda Room of the Tacoma Bicentennial Pavilion at 1313 Market Street. A second day of hearings will be held, if necessary, at the same location on the following day.

People who want to familiarize themselves with information about the EPA proposal, and EPA's estimates of health risks associated with ASARCO's arsenic emissions, may obtain summaries that have been prepared by EPA's regional office in Seattle. The summaries will be available, starting Wednesday, August 3, at these locations:

-- Swasey, Mottet, Fern Hill, South Tacoma, Moore, McCormick, Kobetich, Municipal Reference and Main Branches of the Tacoma Public Library

-- Library, University of Puget Sound

-- Lakewood and Peninsula Branches of the Pierce County Library

-- Vashon Island Branch, King County Library

-- EPA Office of Public Affairs, 12th Floor, 1200 Sixth Avenue, Seattle.

Copies of the summaries will also be available at the three workshops. In addition, copies will be mailed upon request. Requests should be made to Dee Anne Kirkpatrick, by writing her at EPA (Mail Stop 634), 1200 Sixth Avenue, Seattle, 98101, or by calling her at (206) 442-1200.

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U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION X
1200 SIXTH AVENUE
SEATTLE, WASHINGTON 98101

REPLY TO ATTN OF:

M/S 634

In setting standards for the control of arsenic from the ASARCO smelter in Tacoma, EPA is charged by the Clean Air Act to provide "an ample margin of safety to protect the public health." The Clean Air Act does not define what that margin should be, and it is up to William D. Ruckelshaus -- the administrator of EPA -- to make that determination when he promulgates a final standard early next year.

It is hoped that the attached fact sheet, "The Risk to Public Health," will help acquaint people with the health risks associated with arsenic emissions from ASARCO, and to recognize that those risks have not been (and may never be) precisely quantified. Two other fact sheets, "Arsenic Controls at ASARCO" and "Superfund and ASARCO," are also enclosed. They explain what the controls proposed by EPA are intended to achieve and at what costs to the smelter, and how the proposed controls relate to EPA's concern about arsenic deposited in nearby soil over the years.

EPA's Northwest regional office in Seattle is making the enclosed fact sheets available to the public to help any interested citizen participate in this standard-setting process.

Anyone who wants to obtain additional copies of the attached fact sheets, or to review copies of the documents from which they were derived, is encouraged to contact DeeAnne Kirkpatrick by writing her at EPA (Mail Stop 541), 1200 Sixth Avenue, Seattle 98101, or by calling her at 442-1200.

Enclosures

Anita Frankel
Office of Public Affairs

THE RISK TO PUBLIC HEALTH
A FACT SHEET

Arsenic, in its organic form, has long been known as an acute poison to humans when ingested in relatively large amounts. However, more recent data has shown that exposure to lower levels of arsenic results in skin and lung cancer in humans. For carcinogenic substances, such as inorganic arsenic, scientists are unable to identify a safe level of exposure. Therefore, EPA and other federal agencies have taken the position that cancer may occur at any level of exposure to arsenic no matter how low, with the risk of cancer increasing as exposure increases.

For the purpose of developing its arsenic regulation, EPA has determined that the ASARCO smelter should be controlled at a minimum to the level that reflects best available technology (BAT) and to a more stringent level if necessary to prevent health risks that are unreasonable. This approach requires that EPA estimate the cancer risk remaining for the population after these controls are in place and then determine if this residual cancer risk is acceptable, taking into account the costs and technical feasibility of reducing the risk further.

To calculate this residual risk, EPA combined data from two different types of analyses. The first analysis provides what is known as the unit risk number. This number is defined as the lifetime lung cancer risk that would occur in a population which is exposed throughout their lifetime to one microgram per cubic meter of arsenic in the air they breathe. (A microgram is equal to about 1/26 millionth of an ounce and a cubic meter is about the same as a cubic yard. Therefore, one microgram per cubic meter is about 1/28 millionth of an ounce of arsenic in a cubic yard of air.) This unit risk number is calculated by using data from studies of workers who were exposed to arsenic in smelters and at a pesticide manufacturing plant.

The second analysis provides data on the actual exposure for residents living near the smelter. This is done with mathematical models. Utilizing data on emissions of arsenic from the ASARCO smelter as well as information on weather and geographic conditions, a dispersion model is used to calculate the concentration of arsenic expected at over one hundred locations within approximately 12 miles of the smelter. Combining these exposure estimates with population data from the Bureau of Census gives rough estimates of the numbers of people exposed to various concentrations of arsenic within about 12 miles of the smelter. This 12 mile distance was chosen because the mathematical models used tend not to be as accurate at a greater distance. (While our analysis stops at about 12 miles, it must be realized that risk from exposure to arsenic emissions extends beyond this distance, though at a reduced level.)

By combining the unit risk number and the estimated exposure for people living around the smelter, it is possible to make a rough estimate of the cancer risks expected in the ASARCO community as a result of arsenic exposure both before and after controls are installed at the smelter. These risks are most easily expressed by the use of lung cancer incidence numbers. Lung cancer incidence is the expected number of lung cancer cases that would result each year from arsenic exposure within 12 miles of the smelter. Without additional controls, the estimated lung cancer cases are approximately 4 per year. After controls are installed, the expected number drops to approximately one per year. To keep this in perspective, these numbers should be compared to the several hundred lung cancer deaths that would normally be expected each year in a population the size of that found within this 12 mile radius.

UNCERTAINTIES IN RISK CALCULATIONS

The process of calculating these risks for the population around the smelter is a difficult process and involves many assumptions and uncertainties. So while the predictions of risk are a useful tool in the decision-making process, much caution should be exercised to avoid relying too heavily on the numbers presented above. These numbers appear to have greater certainty than they in fact have. Some of the reasons for this are:

1) Modeling Assumptions - Arsenic emissions data from the smelter used in the dispersion model are not precise. In many cases these emission rates were based on assumptions rather than actual emission tests. This is especially true for fugitive emission which are very important in calculating risks yet are very difficult to measure. Also, estimates of how these arsenic emissions mix with the ambient air are hard to determine because of the complex geography and lack of specific weather data for the area around the smelter. These problems may explain why ambient monitoring around the smelter shows lower concentrations of arsenic than EPA's dispersion model predicts.

2) Exposure Assumptions - A principal assumption is that all persons living within the 12 mile radius of the smelter will remain in the same location for a 70 year lifetime and are exposed to an unchanging day-in-day-out concentration of airborne arsenic. This assumption could result in large overestimates of arsenic exposure for those who spend a lot of time away from their residences and in underestimates for workers employed at the smelter. Additionally, exposure to arsenic from resuspension of arsenic bearing dusts from city streets, empty lots, and playgrounds has not been taken into consideration.

3) Unit Risk Number - In calculating the unit risk number, it was often necessary to estimate exposure since actual arsenic air measurements were not available. Because arsenic is a carcinogen, it was also assumed that a linear relationship exists between exposure and risk. Simply stated, this means that a person who inhales one microgram of arsenic per cubic meter of air is one-tenth as likely to get cancer as a person who inhales ten micrograms per cubic meter. If these exposure estimates are incorrect, or if the relationship between exposure plus risk is not linear, a different unit risk number could result which would in turn change the lung cancer risk estimates made for the population around the smelter.

EPA is now in the process of reviewing the data used in calculating risk estimates, especially that data which relates to arsenic emissions and dispersion modeling. If necessary, new data will be developed in these areas to permit EPA to better estimate risks to the smelter community.

ARSENIC CONTROLS AT ASARCO
A FACT SHEET

WHY THE SPECIAL ATTENTION FOR ASARCO'S TACOMA SMELTER?

The ASARCO smelter in Tacoma uses copper ore concentrate with a much higher arsenic content than any other U.S. copper smelter. Arsenic makes up about four percent of the ore at Tacoma; no other copper smelter uses ore concentrate with more than 0.6 percent.

Arsenic is a commercially valuable by-product of the Tacoma operation. The smelter is the only U.S. manufacturer of metallic arsenic and arsenic trioxide, producing one-third of all arsenic used in the country. ASARCO already recovers about 96 percent of the arsenic that enters the smelter as an impurity in the copper ore concentrate. It's the remaining four percent that EPA is seeking to control.

WHAT EPA IS PROPOSING FOR THE TACOMA SMELTER

There are three principal phases in the smelting process that transforms raw ore into blister copper. The ore is first run through a roaster as an initial step in gradually removing impurities. Second, what emerges from the roaster is run through a reverberatory furnace. The molten mixture from the furnace is then sent to converters, the third basic stage in the smelting process. It is the emissions of arsenic that escape capture in the converting process that EPA seeks to reduce with its proposal.

EPA is proposing that additional hoods be placed on the converters so that ASARCO would capture and collect "fugitive" arsenic given off during this third stage in removing impurities from the copper.

The EPA proposal would include a standard expressed in terms of equipment specifications for the collection device. The criterion used by EPA in designing this standard is what's called Best Available Technology. Best Available Technology is the minimum requirement used by EPA in regulating hazardous air pollutants such as arsenic.

IS THE PROPOSED "BEST AVAILABLE TECHNOLOGY" INDEED THE BEST ASARCO CAN DO?

One of the chief issues during the public hearing/public comment process is whether EPA's proposed standard does, in fact, represent the very best control technology available to ASARCO. Are there other operations or practices at the smelter where additional controls can be employed to reduce emissions of arsenic?

There have been discussions among air pollution control engineers that, perhaps, other measures can be applied to produce even greater reductions in ASARCO's arsenic emissions. As one example of additional control techniques, it has been suggested that baghouse controls on the reverbatory furnaces might further reduce the amount of arsenic that now escapes. Other suggestions have been made that ASARCO reduce fugitive emissions throughout the smelter and that consideration be given to requiring ASARCO to use ore concentrate with a lower arsenic content. The feasibility of such requirements and the quantification of emission reduction and cost is the subject of an EPA task force effort. Citizen as well as company and agency input on these questions is encouraged.

WHAT EPA'S PROPOSED CONTROLS WOULD COST ASARCO

EPA has estimated that it would cost ASARCO $3.5 million to install the hooding equipment required by the proposed controls, and that the annual cost to operate the equipment would be $1.5 million. Operation of the equipment is expected to increase the smelter's annual energy consumption by one-half of one percent over the 2.9 billion kilowatt hours of electricity the smelter uses each year. EPA has estimated that its proposed controls could result in an increase in the price of copper by approximately 0.8 percent if the company were to choose to maintain its normal profit margin. The cost may be higher if additional or alternative controls are found to be necessary.

IS SHUTDOWN OF THE SMELTER A POSSIBILITY?

Yes, it is a possibility.

Regulation of hazardous air pollutants such as arsenic is required by Section 112 of the Clean Air Act. In setting standards previously for two other hazardous air pollutants -- asbestos and vinyl chlorides -- EPA promulgated standards that did not cause the automatic shutdown of facilities that released those pollutants to the ambient air. The example of asbestos and vinyl chlorides is instructive. Like arsenic, they are believed to present a risk to public health at any level of exposure. In other words, the only absolutely safe approach to setting standards for such pollutants as arsenic, asbestos or vinyl chlorides would be to set a standard that would reduce emissions to zero. EPA did not do this in the case of asbestos and vinyl chlorides.

However, EPA can impose standards that go beyond Best Available Technology if -- in the language of the statute -- it is necessary "to protect the public health...with an ample margin of safety."

SUPERFUND AND ASARCO
A FACT SHEET

HOW SUPERFUND COMES INTO PLAY

In April 1983, the Washington Department of Ecology (DOE) signed an agreement with EPA that called for DOE to lead a $1.4 million EPA-funded investigation of contamination by hazardous chemicals in an area described as the Commencement Bay Nearshore/Tideflats area. The area includes Ruston, site of the ASARCO smelter. A sum of $100,000 will be devoted to investigate contamination in Ruston, Maury Island and Vashon Island. Soils in those vicinities are known to contain arsenic and cadmium in amounts that have prompted the Tacoma-Pierce County Health Department and the Seattle-King County Health Department to issue warnings about the consumption of garden vegetables grown in contaminated soils.

THE OBJECT OF THE SUPERFUND INVESTIGATION

The investigation, to be managed by DOE and the Tacoma-Pierce County Health Department, will attempt to establish the pathways by which arsenic finds its way into the urine of school children. There are a number of suspected pathways: household dust, windblown dust from unpaved lots and roads, vegetable intake, playground soil and smelter emissions. DOE and the health department will attempt to determine the most significant pathways. According to the current schedule, the investigation should be completed by November 1984. Once the pathways are established, EPA has the authority to order the source of the contamination to take corrective action that will eliminate the risk to health. If a source of the contamination were to refuse to undertake the clean-up, EPA has the authority to do the job itself, with the understanding that all costs incurred must be repaid to EPA by the source.

SUPERFUND'S RELATIONSHIP TO THE PENDING EPA PROPOSAL

The pending EPA proposal to place new restrictions on arsenic emissions from ASARCO is separate from the Superfund program, although the two have similar goals. The pending EPA proposal has as its objective the reduction of arsenic emissions from current and future emissions from the smelter. The Superfund program would be directed toward reducing the health and environmental risks posed by the historic build-up of arsenic over the years.

Until the joint DOE-health department Superfund investigations are completed, it will not be known just what exactly should or can be done to remedy the historic deposit of arsenic in the soils. The remedies to be employed will be developed with the help of public participation. A public advisory group is being formed, and periodic meetings will be held. For more information about the public's involvement with Superfund activities, contact Derek Sandison of the Tacoma-Pierce County Health Department at (206) 593-4750.